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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,599	08/09/2001	Paul Cheng	60409.300901	8192

32112 7590 06/10/2004

INTELLECTUAL PROPERTY LAW OFFICE  
1901 S. BASCOM AVENUE, SUITE 660  
CAMPBELL, CA 95008

EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2171

DATE MAILED: 06/10/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/927,599

Applicant(s)

CHENG ET AL.

Examiner

Etienne P LeRoux

Art Unit

2171

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

### *Drawings*

The drawings are objected to because the Figure Number for the figure including Tables 1-3 has been omitted. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

Claims 1, 6, 11, 12, 20 and 28 are objected to because of the following informalities:

- 1) The acronym CAM must be spelled out in the first instance.
- 2) It is unclear what "able to" comprises.
- 3) It is unclear what "potential" comprises.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites:

- a logic unit able to: receive any said CAM output provided and to create **an address value** based thereon and to provide that **said address value** on an output bus connecting the circuit to the external memory, wherein **said address value** represents **an address** in the external memory; and otherwise receive said hash output and to create **one or more hash addresses** based there on, to receive a hash pointer value and create **said address value** based thereon, and to receive a hash hit signal and responsive there to provide **said address value** on said output bus;
- a search data storage able to: store a plurality of said hash pointer values, wherein said hash pointer values represent **potential instances of said hash addresses**; store a plurality of search data values, wherein said search data values represent potential instances of the search values; receive a **said hash address** from said logic unit and based there on retrieve a said hash pointer value and provide it to said logic unit; and retrieve a said search data value based on said hash pointer value;

Art Unit: 2171

- and a comparator operationally connected to said input bus and able to receive the search value there from, to receive said search data value from said search data storage, to compare the search value and said search data value to determine whether a match exists and, if a said match exists, to provide said hash hit signal to said logic unit, thereby permitting the external memory to **not store any instances** of the search values.

The scope of the invention is difficult to determine because it is unclear how many addresses applicant is claiming and what relationship exists between the plurality of addresses.

Claim 1 recites:

- a CAM unit able to store a CAM database of possible instances of **the search values** known to cause hash collisions in said hash unit and able to match **the search value** against said CAM database such that a CAM output is provided if a match exists, wherein said CAM unit is also operationally connected to said input bus;
- a logic unit able to: receive any said CAM output provided and to create an address value based thereon and to provide that said address value on an output bus connecting the circuit to the external memory, wherein said address value represents an address in the external memory; and otherwise receive said hash output and to create one or more hash addresses based there on, to receive a hash pointer value and create said address value based thereon, and to receive a hash hit signal and responsive there to provide said address value (av1) on said output bus;

Art Unit: 2171

- **a search data storage** able to: store a plurality of said hash pointer values, wherein said hash pointer values represent potential instances of said hash addresses; **store a plurality of search data values**, wherein **said search data values represent potential instances of the search values**; receive a said hash address from said logic unit and based there on retrieve a said hash pointer value and provide it to said logic unit; and retrieve a **said search data value** based on said hash pointer value;
- and a comparator operationally connected to said input bus and able to receive **the search value** there from, to receive **said search data value** from said search data storage, to compare **the search value** and **said search data value** to determine whether a match exists and, if a said match exists, to provide said hash hit signal to said logic unit, thereby permitting the external memory to **not store any instances of the search values**.

The scope of the invention is difficult to determine because it is unclear how many search values applicant is claiming and what relationship exists between the search values.

Claim 1 recites “thereby permitting the external memory to **not** store any instances of the search values.” The scope of the invention is difficult to determine because it is unclear whether the search values are being stored.

Independent claims 6, 11, 12, 20 and 28 include language similar to the above and thus are similarly rejected.

Dependent claims 2-5, 7-10, 13-19 and 21-27 are rejected for at least, being dependent from a rejected base claim.

Art Unit: 2171

### ***Art Rejection***

Due to the indefiniteness of the claims, an art rejection is not included in this first Office Action.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- 1) US Pat No 5,414,704 issued to Spinney discloses a way of searching a relatively large database using a combination of programmable hash algorithms, binary search algorithms and a small content addressable memory (CAM).
- 2) US Pat No. 5,390,359 issued to Damerau discloses if a key for a test record is sufficiently close to anyone of the keys found at a hash address, the test record is assumed to be stored in the system.
- 3) US Pat No. 6,665,297 issued to Hariguchi et al discloses a routing table which searches for the longest matching destination address stored in a hash circuit and outputs a pointer associated with the destination address.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620.

The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

Art Unit: 2171

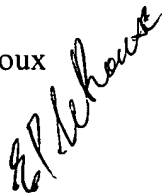
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

June 8, 2004

A handwritten signature in cursive script, appearing to read "Etienne LeRoux", is written over the printed name and date.